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FINANCIAL AND STATUS REPORT

AUGUST 1957

U. S. - 132

TASK V

by

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I. FINANCIAL

Amount authorized	$60,000
Funds Expended (As of September 1, 1957)	4,620
Funds Committed	116
Funds Remaining	55,264

II. STATUS

Image Recognition

In order to proceed with a study of the properties of images and degree of resolution required in the scanner to extract the necessary amount of information for recognition, photographs to the same scale of six different types of automotive vehicles have been made for use as basic material. Study of other types of images will follow.

Two pieces of test equipment are being contructed. First, a device for investigating the characteristics of the signals which can be obtained by scanning photographs or silhouettes with various degrees of resolution. The scanning is in a narrow vertical line obtained by rotating a mirror. Light reflected from the photograph or object strikes the mirror and is reflected through a lens system on to a photo multiplier tube with an adjustable aperture. Means is provided for moving the photograph across the field of view of the scanner in a horizontal direction in order to traverse the complete image with successive traces of the narrow vertical line.

The size of the photo tube aperture determines the optical resolution and thus the maximum amount of information that can be extracted. The scanning and signal processing procedures, in addition to the resolution, determine the actual amount of information taken out.

In addition to the scanner a device is being constructed for determining the sensitivity required to detect photoelectric changes in reflected light that are produced when an object moves across the field of view of a proposed optical system. This consists of a lens system, a photocell and a transistor amplifier. Tests will be made with this equipment under various amounts of illumination and against various back-ground conditions.

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